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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,355	08/26/2003	Florence Eschbach	10559-865001 / Intel P173	4179
20985	7590	09/08/2006	EXAMINER	
FISH & RICHARDSON, PC P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			HU, HENRY S	
			ART UNIT	PAPER NUMBER

1713

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/649,355	Applicant(s) ESCHBACH ET AL.	
	Examiner Henry S. Hu	Art Unit 1713	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Amendment of August 11, 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 and 33-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 and 33-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8-8-2006</u> . | 6) <input type="checkbox"/> Other: _____ |

1. It is noted that USPTO has received **Amendment** and **IDS** (3 pages) filed on August 11, 2006 and August 8, 2006 respectively. **Claims 1-12 and 14-17 were amended; Claims 18-32 were cancelled, while new Claims 33-38 were added.** To be more specific, parent **Claim 1** was amended to further limit to be a flexible pellicle with more clarification on process of making as well as to be useful for lithographical exposure; non-elected **Claims 18-19 (Groups II) and Claims 20-32 (Group III)** were cancelled, while dependent **Claims 2-12 and 14-17** were amended accordingly.

The Applicants “do not provide” or discuss any support on page 7 top section of Remarks for addition of new Claims 33-38 at all. **Claims 1-17 and 33-38** with only one independent claim (Claim 1) are now pending. An action follows.

DETAILED ACTION

Response to Argument

2. Applicant's argument filed on August 11, 2006 has been fully considered but they are not persuasive. The focal arguments related to the patentability will be addressed as follows: Such an amendment on parent Claim 1 involves two things: (A) it relates to a flexible pellicle, and (B) more clarification on process of making as well as being useful for lithographical exposure.

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After performing a new search, previous set of 102 and 103 rejections is modified into a pure set of 103 rejections with two new references Nguyen and Cotte as follows:

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The limitation of parent *Claim 1* in present invention relates to a method comprising:

(A) clamping a flexible pellicle between a first frame member and a second frame member, wherein the first frame member and the second frame member join to form a pellicle frame;

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(B) mounting the pellicle frame to a reticle by attaching at least one of the first frame member and second frame member to the reticle; and

(C) lithographically exposing a substrate to a pattern on the reticle with the pellicle frame mounted to the reticle.

*See other limitations of dependent **Claims 2-17 and 33-38.***

5. Claims 1-11 and 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. (US 6,300,019 B1) in view of Cotte et al. (Proceedings of SPIE, vol. 4562, pp. 641-651, (2002)) and one of Matsukura et al. (US 6,548,129 B2 with a publication date of April 15, 2003 and a US filing date of March 13, 2001), Keys (EP 416,528 A2) and Hamada et al. (US 5,693,382) for the reasons set forth in paragraphs 7-10 of office action dated 5-8-2006 as well as the discussion below.

6. Claims 12-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. (US 6,300,019 B1) in view of Cotte et al. (Proceedings of SPIE, vol. 4562, pp. 641-651, (2002)) and one of Matsukura et al. (US 6,548,129 B2 with a publication date of April 15, 2003 and a US filing date of March 13, 2001), Keys (EP 416,528 A2) and Hamada et al. (US 5,693,382) as applied to Claims 1-11 and 33-38, and further in view of Nguyen (US 6,459,491 B1) for the reasons set forth in paragraph 6 of office action dated 10-18-2005 as well as the discussion below.

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7. **Applicants:** Applicants have now claimed in amended parent **Claim 1** an unexpected way of **obtaining a flexible pellicle** by three-step process involving clamping pellicle between two frames, mounting the frame(s) to a reticle, and then lithographical exposure through reticle pattern. **New Claims 33-38** are added.

Although two frames and may be used together with one single pellicle or two pellicles, both 102 and 103 rejections cannot stand since the primary reference Ikeda's pellicle mounting systems 60 are used to press a pellicle to a photomask 10 during mounting (see Ikeda at column 1, line 35-51; also see Figure 2 and column 4, line 47-54). No clamping method is specifically disclosed or suggested as Applicants' **Figures 2B, 4B and 5B**. Additionally, Ikeda cannot teach using flexible pellicle.

8. **Examiner:** Parent **Claim 1** is now involved in using a flexible pellicle. In a very close examination, Ikeda is silent about three things as: (A) using a flexible pellicle, (B) attaching a reticle to a frame, and (C) specifically using a clamp to mount pellicle to be in between two frames.

9. Previous 102 (b) rejection is accordingly converted to 103(a) rejection with Matsukura, Keys or Hamada to teach, "**using a flexible polymer pellicle**" with advantage as already discussed earlier. Such a rejection can be easily applied to the rejection of new **Claims 33-38** since a flexible film of polymer pellicle is used.

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With respect to “**attaching a reticle to a frame**”, Cotte has taught in figure of page 643 that a frame can be effectively bonded to a reticle via compliant adhesive gasket. By doing so, such obtained pellicle system is very useful in lithography, especially in 157 nm range (abstract, last three lines).

10. With respect to “**using the clamp to mount a pellicle so as to be in between two frames**”, Ikeda has already disclosed in **Figure 2** and may be in other figures that **either two pellicle membranes or one single pellicle membrane** can be mounted on two frames (column 4, line 47 – column 5, line 10; see using **two different frames** on column 5, line 53-65). It requires using the same membranes for best result whenever two pellicle membranes are applied (column 4, line 50-54). Since only photo-mask is used in between two frames, the attachment of a reticle to at least one of the two frames can be taught by Cotte (see above) in Ikeda’s system for higher accuracy (see working figures in columns 4-9).

11. In view of Applicants’ **Figures 2B, 4B and 5B with Ikeda’s Figure 5B**, the matter now is that **Ikeda’s pellicle is not located exactly at the middle of two-frame structure**.

Attention is directed to one fact that open language “**comprising**” is used in the process of parent Claim 1, while the other fact is that pellicle membrane is **indeed** located by using two-frame skeleton. In order to be totally distinguished from prior art for 103 rejection, **Applicants may need to show the “criticality” why the use of clamp for mounting is needed.**

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12. With respect to the 103(a) rejection of dependent **Claims 12-17** regarding using a **polymer layer** in between reticle and frame as specified, a new prior art Nguyen is applied accordingly. On column 1, line 49-59, the tertiary reference Nguyen teaches that the reticle can be easily covered by using a **stretchable** polymer membrane (which is exactly the same material as pellicle). By doing so, less airborne contamination is resulted.

Conclusion

13. Applicant's amendment **necessitated the new ground(s) of rejection presented in this Office action**. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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14. Any inquiry concerning this communication or earlier communication from the examiner should be directed to **Dr. Henry S. Hu whose telephone number is (571) 272-1103**. The examiner can be reached on Monday through Friday from 9:00 AM –5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The fax number for the organization where this application or proceeding is assigned is **(571) 273-8300** for all regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Henry S. Hu

Patent Examiner, Art Unit 1713, USPTO

August 28, 2006



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